



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

The climax of apperceptive completion appears in the sublogical processes such as abstraction, comparison, expectation, and combination, which are the psychological foundation of formulated thinking both inductive and deductive.

Erdmann regards attention as a ground-function of the mental life. Whether it takes the form of clearness of the changing content of consciousness or the form of expectation, it involves a reproductive process which is determined by the connection of residua. In expectation that which is expected is commonly not given as an object of consciousness, though under favorable circumstances it may be. In the former case what is expected must be regarded as an excited representable, a kind of pre-consciousness.

It is always a dubious process to present discontinuous bits of a careful discussion for approval or disapproval. In the present instance it were worse than useless unless it induces the reader to explore for himself the original mine of fine observation and far-reaching analysis.

RAYMOND DODGE

Wesleyan University

The Origin and Development of the Nervous System from a Physiological Viewpoint. By C. M. CHILD. University of Chicago Press, Chicago, Illinois. 1921. Pp. xvii., 296.

In this book the origin and development of the nervous system are considered from a physiological point of view.

The first five chapters form an introduction to the primary thesis, and are devoted to a discussion of pattern in the organism and the possible relation of pattern to the physiological gradients in general.

Protoplasmic pattern and organismic pattern, in the author's opinion, differ probably only in the order of magnitude; and the question immediately arises whether organismic pattern (the relation of parts in the organism) is inherent in protoplasm, and develops spontaneously, or is, in some sense, a response to environment. The subject-matter of the book is concerned with an attempt to answer this question. Excluding the purely contactual or mechanical factor, there are two chief categories of relation between protoplasm and its environment, the material or chemical and the dynamic or excitatory; and the latter—the excitation-transmission relation—the author believes to be the important factor in impressing the organismic pattern on the protoplasmic substratum.

He discusses the physiological basis of various pattern-types in plants and animals, attaching great importance to the physiological gradients (quantitative gradations in functional activity) in pattern-production.

The nervous system, the organ of integration, in its origin and development, does not involve the appearance of a new functional activity different from the fundamental activities of protoplasm in general; some kind of physiological continuity exists between excitation and conduction in protoplasm generally, and the development of the nervous system. "Living protoplasm is functioning at all times and development is a process of functional construction, that is, beginning with a given structure and function, the continuance of function modifies the structural substratum, and this in turn modifies further function, and so on." According to this conception, the author believes that the nervous system is the physiological and morphological expression of the excitation-transmission relations, first with respect to the primary or chief physiological gradients, and later with respect to the progressive developmental complications as they arise.

The localization of the nervous system is an example of surface-interior pattern, and the general direction of growth and differentiation is down the physiological gradients, beginning at the anterior end and extending posteriorly.

To account for the origin and development of the neuron-pattern the author suggests that this may be determined by the electrical polarization of the cell (neuroblast), which must lead to changes in its physiological condition and activity. In the stimulation of living protoplasm generally the primary change is probably electrical and this electrical polarization of a neuroblast may determine changes in its rate of metabolism and consequently in its physiological activity.

In a discussion of this question at the present stage of its development we are hampered by a lack of knowledge of the fundamental nature of physiological processes and of the ultimate structure of biological organisms. Although the mechanistic conception of life may not appeal to all, mainly on account of the paucity of facts which can be brought forward to support it, yet the conclusion of the neovitalist that the relation between pattern and process will never be understood is unjustifiable. There is little doubt that the two have a constant and necessary relationship, and for his attempt to elucidate the possible character of this relationship in the origin and development of the nervous system the author is to be commended.

SUTHERLAND SIMPSON

Cornell University

Fünf Reden von Ewald Hering. Herausgegeben von H. E. HERING. Mit einem Bildnis von EWALD HERING. Leipzig, W. Engelmann. 1921. Pp. 140. Price about 75 cents.

Dr. Hering has earned the grateful thanks of all experimental psychologists by this reprint of certain classical addresses delivered by his distinguished father. The addresses are: Ueber das Gedächtnis als eine allgemeine Funktion der organisierten Materie (Vienna, May 30, 1870); Ueber die spezifischen Energien des Nervensystems (Prague, [1882] 1884); Zur Theorie der Vorgänge in der lebendigen Substanz (Prague, [Feb. 18,] 1888); Zur Theorie der Nerventätigkeit (Leipzig, [May 21, 1898] 1899); and the Antwortrede to the award of the Græfe-medal made at the 33d meeting of the Ophthalmological Society (Heidelberg, [Aug. 6,] 1906). The text has apparently been edited, so far as editing was needed; I notice the removal of a troublesome clause from the third address (p. 64). The book is printed in large and clear type on paper of a rather poor quality. The frontispiece portrait is excellent.

There are some curious omissions. There is no paged table of contents; the fifth address does not figure in the list on cover or title; and we are not told where the addresses were originally printed. The Open Court translation (1895) of the first two—those on Memory and on Specific Energies of the Nervous System—is similarly silent. The address on Memory appeared in the *Almanach der Wiener Akad. der Wissensch., Jahrg. 20*; a second edition of the offprint was published in Vienna in 1876; and the address was included in W. Ostwald's *Klassiker der exakten Wissensch.* (no. 148) in 1905. The address on Specific Energies was given at Prague in 1882 (see p. 79 of the present reprint) when Hering assumed the rectorate of the university; it seems to have remained unpublished until printed (1884) in *Lotos, naturwiss. Zeitschrift hrsg. v. d. deutsch. naturwiss.-med. Verein f. Böhmen*, vol. v. The third address was also published in *Lotos*, vol. ix. The Leipzig lecture was issued in pamphlet-form by Veit & Comp., Leipzig. I do not know whether the Antwortrede has been published before; it is not contained in the report of the Heidelberg Congress in the *Arch. f. Augenheilkunde*, 56, 1907, 93 ff.¹ It is, as the editor remarks in his preface, of especial interest, since Hering uses the occasion

¹The volume is wrongly given as 55 in the *Zeits. bibliography* (xlvii., 1908, 362, no. 654) and in the *Psychol. Index* for 1906 (13, 1907, 41, no. 649).